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BEYER WEAVER & THOMAS, LLP

INTELLECTUAL PROPERTY LAW
500 12th Street, Suite 200, Oakland, CA 94607
Telephone: (510) 663-1100 Facsimile: (510) 663-0920
www.beyerlaw.com

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FAX # : (571) 273-8300

Sender: Godfrey K. Kwan
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Application No: 09/846,849

Re: Notice of Appeal

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Fax Cover Sheet – 1 Page
Pre-Appeal Brief Request for Review - 5 pages
Notice of Appeal – 2 pages

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Schwartzman et al.

Application No.: 09/846,849

Filed: May 2, 2001

Title: METHODS AND APPARATUS FOR ENABLING AND DISABLING CABLE MODEM RECEIVER CIRCUITRY

Attorney Docket No.: CISCP203/1939

Examiner: USTARIS, JOSEPH G.

Group: 2617

CERTIFICATE OF FACSIMILE TRANSMISSION:
I hereby certify that this correspondence is being transmitted by facsimile to the United States Patent and Trademark Office, Commissioner for Patents, Attn: Examiner Ustaris, Fax No. (571) 273-8300 on August 18, 2006.

Signed: Leslie Russell
Leslie Russell

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Mail Stop AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Applicants request review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a Notice of Appeal.

The review is requested for the reasons stated below.

REMARKS

Claims 1-63 are pending. Independent claims 1, 11, 23, 28, 38, 45, and 54 were rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu (US005883901A) in view of Quigley (US006785564B1) and in view of Sawyer (US006765925B1). Chiu describes a Signal Conversion System (SCS) connected to a cable modem. The Signal Conversion System (SCS) uses the Disable/Enable Cable Modem Request subframe type "to turn on and off a particular cable modem 113. The subframe type is 0x03 for Disable and 0x05 for Enable. The

Disable/Enable CM subframe is a six-byte MAC modem address field that uniquely identifies the particular CM 113 the frame is directed to." (Col 12, Lines 45-51)

Quigley describes reducing "the power requirements of cable modem 16 or other customer premise equipment by placing equipment attached to the cable modem into a low power or power off state. In the described exemplary embodiment, the forward tuning path and demodulation circuits of the cable modem are disabled in the low power state and two way communications are suspended... In an exemplary embodiment, the duration of the wake up timer may be designed to provide on the order of about a 90% sleep interval and a 10% active interval. A low power sleep interval may be in the range of about 1-4 seconds. In the described exemplary embodiment, cable modem 16 reduces its average power by continuously establishing a low power state. Cable modem 16 returns to an active state when the sleep timer expires. However, upon returning to the active state cable modem 16 monitors the downstream traffic for local commands as well as the activity level of locally attached devices. If the low activity condition persists, cable modem 16 requests another sleep interval." (Column 4, Line 56 - Column 5, Line 11).

Sawyer has a background section that states it is useful for "storing state information that defines the various parameters of a cable modem connection." (Column 1, Lines 49-51) Sawyer does not maintain, however, any indication of "receiver circuitry state," as recited in independent claim 1. Sawyer and the cited background is believed to describe only conventional cable modem headends and does not teach or suggest maintaining any indication of receiver circuitry state. Sawyer also does not teach or suggest "transmitting a second message with second instructions from the headend to enable the cable modem receiver circuitry."

It is respectfully submitted that even if there is sufficient motivation to combine, Chiu and Quigley and Sawyer do not describe all of the elements of the independent claims. The independent claims recite "instructions from the headend to disable the cable modem receiver circuitry for periodic intervals separated by activation windows" and "second instructions from the headend to enable the cable modem receiver circuitry." The Examiner relies on Quigley to teach or suggest these elements. Quigley does not disclose "instructions from the headend to disable the cable modem receiver circuitry for periodic intervals separated by activation windows" nor does it describe "transmitting a second message with second instructions from the headend to enable the cable modem receiver circuitry." Quigley explicitly describes "Prior to

entering the low power state, cable modem 16 sets a wake up timer, the expiration of which terminates the low power state, returning cable modem 16 to full power, active operation." This is performed without any instruction from the headend. In fact, Quigley goes into detail describing a variety of ways to disable a cable modem, but none teach or suggest any instruction from the headend. Quigley explicitly describes the ways the cable modem can wake up. "A sleep cycle may be terminated by expiration of the timer or by an interrupt issued by any of the connected peripherals. If an interrupt is received 262 via the ISB, MIPS core initiates a wake up sequence 264 and the cable modem returns to full power operation to process the message that stimulate the wake up message. When the wake up timer lapses at the end of the predetermined interval 266, MIPS core initiates activation of the cable modem 268. However, in the absence of network activity 270 the cable modem may request another sleep mode cycle 272." (Description of Figure 11)

Consequently, the headend may still be transmitting data to the cable modem when the cable modem is in its low power state and data transmissions can be lost. Furthermore, having a headend send "instructions to disable the cable modem receiver circuitry for periodic intervals separated by activation windows" and "instructions to enable the cable modem receiver circuitry" are not an obvious modification of a combined Chiu and Quigley and Sawyer system because having a headend send instructions can increase complexity as it includes coordination with a headend. According to various embodiments, the techniques of the present invention recognize that increased coordination with a headend can increase system complexity, but the headend then has information about which cable modems have receiver circuitry disabled for which periodic intervals. The headend then, for example, can transmit data to cable modems at selected times to limit the chance of data loss.

Neither Quigley nor Chiu nor Sawyer teach or suggest transmitting "a second message with second instructions from the headend to enable the cable modem receiver circuitry such that the cable modem receives the second message to enable cable modem receiver circuitry during an activation window." Quigley in fact teaches away from this element because it describes setting it's own sleep timer. No second message with second instructions from the headend is needed to enable the cable modem receiver circuitry. The Quigley cable modem wakes up by itself.

In light of the above remarks relating to independent claims the remaining dependent claims are believed allowable for at least the reasons noted above. Applicants believe that all pending claims are allowable. Should the Examiner believe that a telephone conference would expedite the prosecution of this application, the undersigned can be reached at the telephone number set out below.

I am the attorney or agent acting under 37 CFR 1.34

Respectfully submitted,
BEYER WEAVER & THOMAS, LLP

Godfrey K. Kwan
Reg. No. 46,850

P.O. Box 70250
Oakland, CA 94612-0250
(510) 663-1100

LISTING OF EXAMPLE INDEPENDENT CLAIMS

1. A method for disabling and enabling receiver circuitry in a cable modem connected to a headend in a cable modem network, the method comprising:

transmitting a first message with first instructions from the headend to the cable modem to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

maintaining at the headend an indication of cable modem receiver circuitry state;

transmitting a second message with second instructions from the headend to enable the cable modem receiver circuitry such that the cable modem receives the second message during an activation window, wherein any message received by a cable modem during a period outside the activation window is ignored; and

setting the indication of cable modem receiver circuitry state to enabled.

11. A method for disabling and enabling cable modem receiver circuitry connected to a headend in a cable modem network, the method comprising:

receiving a first message with first instructions from the headend to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

disabling the cable modem receiver circuitry;

receiving a second message with second instructions to enable the cable modem receiver circuitry from the headend during an activation window, wherein any message received outside the activation window is ignored; and

enabling cable modem receiver circuitry.

23. A computer program product comprising a machine readable medium on which is provided program instructions for disabling and enabling cable modem receiver circuitry connected to a headend in a cable modem network, the computer program product comprising:

computer code for transmitting a first message with first instructions from the headend to the cable modem to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

computer code for setting an indication of cable modem receiver circuitry state to disabled;

computer code for transmitting a second message with second instructions to enable the cable modem receiver circuitry from the headend so that the cable modem receives the message during an activation window, wherein any message received by a cable modem outside the activation window is ignored; and

computer code for setting the indication of cable modem receiver circuitry state to enabled.

28. A headend connected to cable modems in a cable modem network, the cable modems comprising receiver circuitry that can be disabled and enabled, the headend comprising:

transmitter circuitry for transmitting a first message with first instructions from the headend to the cable modem to disable the cable modem receiver circuitry for periodic intervals separated by activation windows and for transmitting a second message with second instructions from the headend to enable the cable modem receiver circuitry such that the cable modem receives the second message during an activation window, wherein any message received by a cable modem during a period outside the activation window is ignored; and

memory;

one or more processors coupled with the memory and the transmitter circuitry, the one or more processor configured to set an indication of cable modem state to disabled to correspond with the receipt of the first message by the cable modem and to set the indication of cable modem state to enabled to correspond with receipt of the second message by the cable modem during the activation window.